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OMS

Advisory Circular

SUBJECT: EPA Confirmatory Testing of Light-Duty Vehicles and Light-Duty Trucks

I. Purpose

The purpose of this advisory circular (A/C) is to inform manufacturers of EPA's present policy for confirmatory testing. This includes the selection and scheduling of testing at EPA's Motor Vehicle Emissions Laboratory (MVEL) in Ann Arbor, Michigan. The provisions of this A/C will supersede those in A/C No. 84 - Confirmatory Testing of Light-Duty Vehicles and Light-Duty Trucks, A/C No. 40 - Retesting Emission-Data Vehicles Being Certified to California Waiver Standards, and A/C No. 54A - Scheduling Testing of Light-Duty Vehicles at the EPA Laboratory.

II. Background

A. Under the provisions of §86.081-29, EPA may perform confirmatory testing on emission-data vehicles, durability-data vehicles, and running change vehicles. Under the provisions of §600.008-77(c), EPA may conduct fuel economy confirmatory testing for fuel economy data or certification vehicles.

B. EPA is not required to confirmatory test each certification or fuel economy vehicle. In order to facilitate its selection of vehicles to confirmatory test, EPA developed a test waiver process. This A/C lists the manufacturer's responsibilities for providing test data and vehicle information for EPA's use in selecting vehicles to confirmatory test. While EPA does not intend to establish firm criteria for waiving confirmatory testing, this A/C suggests those items that EPA typically considers in its waiver process. EPA may conduct confirmatory testing of any vehicle, regardless of these general waiver criteria.

C. Advisory Circular No. 84 separated the exhaust emissions testing protocol from the evaporative emissions testing protocol. These separate policies left unclear the testing allowed to show concurrent compliance with the exhaust and evaporative emission standards. This A/C specifies a unified testing policy that combines the two previously separate testing protocols.

D. The provisions of A/C No. 40 - Retesting California Vehicles, published in April 1974, are updated and included in this A/C. As stated in A/C No. 40, EPA policy allowed the manufacturer to request a second confirmatory test at EPA when the first test at EPA met the Federal standards but failed to meet the California standards. This policy is being amended because of EPA's limited resources for testing vehicles. EPA will no longer automatically grant a retest on an emission-data vehicle that has passed the Federal standards at EPA.

E. A/C No. 54A - Scheduling of Testing at EPA, was published in December 1979. We have continued to refine the scheduling process since that time. This A/C updates the procedure of test scheduling, and thus supersedes A/C No. 54A.

III. Applicability

The provisions of this A/C are effective immediately and apply to 1983 and later model year light-duty vehicles and light-duty trucks.

IV. Vehicles Not Normally Subject to Confirmatory Testing-- Special Considerations

A. Durability-Data Vehicle Testing at the Motor Vehicle Emissions Laboratory

1. EPA will not routinely test durability-data vehicles at its laboratory. Submittal of the waiver request form is, therefore, not necessary for durability-data vehicles.

2. However, if EPA determines that there may be a correlation problem between the manufacturer's facility and MVEL or has reason to believe that the test data submitted by the manufacturer are not accurate or are not in accordance with the applicable regulations and procedures, then EPA may require a confirmatory test of specific durability-data vehicles to be conducted at EPA.

B. Carryover and Carry-Across Data

Once the test data waiver determination has been made through the waiver procedures, those same data will not be considered for confirmation again. If the data are subsequently carried over or carried across, the certification and fuel economy test waiver decisions established for the data originally are still applicable. (Ref: A/C No. 17F for carry-over and carry-across information.)

V. Manufacturers' Data Requirements and Testing Protocol
for Data Acquisition

A. Test Data Required from the Manufacturer for Waiver
Review

1. Under the provisions of §86.082-26(a)(3), the manufacturer is required to conduct a valid test on each emission-data vehicle at or above the stabilized mileage established for that vehicle's engine family. The data are required to be submitted to EPA under §86.082-23(c).

2. Under the provisions of §600.006-82(c), the manufacturer is required to submit city and highway fuel economy data from valid tests on all data vehicles except durability-data vehicles.

3. The manufacturer is responsible for providing data that can be used as official certification or fuel economy data (Ref: Sections VI.A.6 and VII.D.1.b). The manufacturer should not assume that EPA will generate official test results, either in the absence of valid data from the manufacturer, or if the confirmatory test conducted at EPA has voided. In order to allow enough time for EPA to make a waiver decision and conduct confirmatory testing (if EPA decides not to waive the vehicle), the manufacturer should submit the test data to EPA at least two weeks prior to when the manufacturer needs the official data.

B. Retest Criteria at the Manufacturer's Facility

1. Under §86.082-26(a)(10), EPA does not limit the number of certification tests that the manufacturer may conduct on emission-data vehicles. However, the latest valid test that the manufacturer conducted with the vehicle is deemed to be the official manufacturer's emission certification test (Ref: §86.081-29(a)(3)(ii)).

2. An emission-data vehicle will be considered a failed vehicle if it fails the applicable exhaust emission standards more than once, regardless of whether they are consecutive failures (Ref: §86.081-29(a)(3)(iii)(B) and §600.007(b)(4)). This exhaust emission failure criterion also applies to vehicles being tested for evaporative emissions (see paragraph B.3, following, for evaporative emission failure criteria). If the manufacturer chooses not to retest following a failed test, EPA will consider the emission-data vehicle to be a failed vehicle.

3. For vehicles being tested for evaporative emissions, an emission-data vehicle will be considered a failed vehicle if it fails the applicable evaporative emissions standards more than three times, regardless of whether they are

consecutive failures. The manufacturer may declare the vehicle failed after less than four failures. (Note: The part of §86.082-26(a)(3)(i)(A) that allowed for no more than three evaporative emission failures was inadvertently deleted in the October 13, 1981 interim final rule. The deleted part will be reinstated by a later technical amendment to the regulations.) Furthermore, the vehicle must pass both the applicable exhaust and evaporative emission standards on the same valid official test in order to be considered a passing vehicle (Ref: §86.082-26(a)(3)(i)(c)).

C. Official Use of the Manufacturer's Data

1. Unless otherwise rejected under the provisions of §86.081-29(a)(3) or §600.008(g), as discussed in the following paragraph, manufacturers' emission and fuel economy data for vehicles which are not selected to be confirmatory tested at EPA's facility will be accepted by EPA as official data.

2. Paragraphs §86.081-29(a)(3) and §600.008(g) further provide that EPA may reject emission or fuel economy data if in EPA's judgment, a lack of correlation exists between the manufacturer's and EPA's test data. EPA will not accept the manufacturer's data until the manufacturer determines the reason for the lack of correlation and establishes the validity of the data. Furthermore, §86.081-29(a)(3) and §600.008(h) provide that any data may also be rejected if EPA has reason to believe that any test data submitted by the manufacturer are not accurate or have been obtained in violation of the regulations.

3. All emission and fuel economy test data results from the test vehicle while it is in the configuration in question must be submitted to EPA prior to consideration of waiver of the confirmatory test (Ref: §86.082-23). If, under the provisions of §86.082-26(a)(3)(i), a manufacturer has more than one valid and passing test on an emission-data vehicle, only data from the last valid emission test will be accepted as official certification data. However, §600.008 requires that all fuel economy results of tests conducted at the manufacturer's facility which are valid and which do not fail the applicable emission standards, will be averaged. Therefore, the average fuel economy test results of such valid tests will be considered the official fuel economy data for that data vehicle.

D. Vehicles that Fail Emission Standards at the Manufacturer's Facility

If a vehicle fails to show compliance with any applicable emission standard when tested at the manufacturer's facility, the vehicle (in its failed configuration) will not be

tested at EPA for emissions compliance or fuel economy considerations even if it was originally selected for testing at EPA. In determining whether a vehicle has failed emissions standards, only the manufacturer's most recent emission data will be considered as official. Thus, even if previous test results from the vehicle did conform with all applicable emission standards, if the latest test failed any applicable emission standard, EPA will not accept the vehicle for emission or fuel economy confirmatory testing. The manufacturer is not precluded, however, from proceeding with options under §86.082-30(b)(4).

VI. Waiver from Confirmatory Testing at the EPA Laboratory

A. Overview of the Waiver Procedure

1. Under the confirmatory test waiver procedure, the manufacturer's test data for a given vehicle will be reviewed and evaluated to determine whether confirmatory testing will be waived. EPA will endeavor to inform the manufacturer of EPA's decisions to waive testing of the vehicle within three working days after all the required information for the vehicle is received by EPA. However, EPA cannot guarantee a decision within this time frame. The review of vehicle data and the decision whether or not to run a confirmatory test is only a part of the certification and fuel economy process. The manufacturer should note that if it intends to make immediate use of the official test data in the certification or fuel economy programs, then EPA will normally require a minimum of two weeks following the receipt of a vehicle's data in order to (a) complete its test waiver review, (b) conduct any confirmatory tests, and (c) make a final decision on what is to be considered the official data.

2. The principle, but not the only, factors that EPA considers in determining the waiver of confirmatory testing are given in Part C of this section (following). However, EPA will not use rigid criteria compiled from these factors in deciding a waiver and may use other factors in determining the waiver of confirmatory testing. Regardless of the general waiver considerations, EPA still may conduct confirmatory testing of any vehicle for which EPA determines such testing is needed. While most confirmatory testing will be conducted at the MVEL, EPA can require the tests to be conducted at any qualified laboratory, including the manufacturer's own laboratory (Ref: §86.081-29(a)(2)).

3. In addition to those vehicles selected for confirmatory testing based upon the waiver factors, EPA plans to select at random a number of vehicles for confirmatory testing.

4. If EPA decides to accept the vehicle's data then EPA will issue a test waiver and no confirmatory testing on the vehicle will be conducted. As a result, the manufacturer's test data will be accepted as the official results (Ref: Section V.C.1).

5. However, any additional test data not yet reviewed through the waiver procedure, even if generated by the same vehicle in the same configuration as the previously considered data, must be submitted for a waiver disposition if the additional data are to be used for certification or fuel economy purposes.

6. As specified in Section V.C.2 of this A/C, EPA may reject data generated at the manufacturer's facility, if in EPA's judgment there is a lack of facility correlation or reason to believe the data was not properly obtained. If the manufacturer's data have been rejected, EPA may elect to conduct confirmatory testing and thereby generate official test data. However, it is not EPA's responsibility to conduct confirmatory testing if the manufacturer's data have been rejected. Therefore, a manufacturer's certification and fuel economy programs might be delayed until such time as the manufacturer can generate acceptable data at its facility.

B. Information Required for Waiver Review

EPA's ability to make waiver decisions in the projected time period of three days will be enhanced significantly if the following information is submitted, in computer readable form where applicable, consistent with EPA's recommended formats:

1. The completed Vehicle Information and Manufacturer's Test Data Sheets;
2. Copies of the vehicle log sheets and deterioration factor input sheets for the vehicles, if not already submitted; and
3. The Waiver of Test Request Form (available from the EPA certification team).

C. Factors Considered in Determining Waivers

In evaluating a specific vehicle for a confirmatory test waiver, several factors which EPA may consider in determining eligibility for the waiver are:

1. The proximity of a manufacturer's emission test results to the applicable standards. Since EPA normally will not decide whether or not to waive confirmatory testing until

deterioration factors are applied, manufacturers are requested to supply the information regarding certification emission levels (deterioration factors applied to the test data), in addition to the test results, on the test request form. Deterioration factors calculated according to California Air Resources Board procedures should be used for those vehicles being certified for sale in the State of California.

2. The historical difference in test results between the manufacturer's laboratory and the MVEL. Vehicles with test results from manufacturers that do not certify every model year (i.e., no recent test results) or new manufacturers (i.e., no previous test results) will be less likely to be waived due to lack of information to substantiate acceptable correlation.

3. Prevalence of certification program problems in certifying a particular manufacturer's vehicles or family, based on current and previous certification program experience.

4. In-use data on vehicles of similar designs, including SEA and in-use compliance program results.

5. Any available information indicating that the test data submitted by the manufacturer are not accurate or do not conform to present regulations and procedures.

6. Use of a detonation (knock) sensor, or other devices which dynamically adjust engine parameters.

7. Fuel economy values that are among the highest in the vehicle's comparable class.

8. A new engine design, control system, drive system, etc.

9. The vehicle possibly being subject to the Gas Guzzler Tax.

10. A disproportionate increase in fuel economy compared to similar vehicles in the current or previous model years, that is not reasonably explained by a design or calibration change.

D. Waiver of Vehicles to be Certified to the State of California Emissions Standards

1. All vehicles certifying to California emissions standards will be considered for confirmatory test waivers in the manner described in paragraphs 2 and 3, below. If a vehicle certifying to California standards is granted an EPA

test waiver, it is the Agency's understanding that the California Air Resources Board (CARB) will accept the manufacturer's emission test data as the official test results. However, the acceptability of the manufacturer's test data are under the full control of CARB, in accordance with its regulations, and the applicable EPA waivers of Federal preemption. EPA is not responsible for providing or approving data acceptable to CARB.

2. Vehicles to be Sold only in California

a. Due to limited testing capability, EPA will not, as was done in the past, routinely test vehicles that are being offered for sale only in California. (EPA requires that the manufacturer receive a CARB Executive Order prior to EPA issuing a Federal certificate for California-only engine families.) Therefore, EPA does not intend to confirmatory test California-only vehicles based on emissions considerations.

b. EPA's confirmatory test waiver review of California-only vehicles will be based upon fuel economy considerations alone. However, as with all vehicles, the California-only vehicles must comply with all applicable emission standards, specifically the California standards (Ref: §600.007(b)(4)), in order for the data to be acceptable.

c. If EPA decides to waive a California-only vehicle, EPA will consider direct requests from CARB that EPA test the vehicle for CARB. EPA personnel and test resources will be taken into account in its consideration.

3. Vehicles to be Sold in All 50 States

a. Manufacturers may designate their Federal vehicles to also represent California vehicles. These are called 50-state vehicles. The confirmatory test waivers review for these vehicles will be based on both emission compliance with Federal standards and fuel economy considerations.

b. If a 50-state vehicle is confirmatory tested at EPA and, on the first valid emission test, complies with the Federal emission standards but fails to meet the California standards, then the manufacturer may request a retest. Provided there are sufficient EPA personnel and testing resources available, the request will be granted and the retest conducted at the EPA laboratory. In this case, EPA will treat the first test as if it were a failure of the Federal emission standards and the retest as if it were requested under §6.084-29(a)(3), (iii)(B)(1). Note that if the vehicle fails Federal standards on the retest, regardless of where the retest is conducted, the vehicle configuration will have failed to meet Federal certification standards on the official (latest) test (Ref: §6.084-29(a)(3)(iii)(B)(2)).

VII. Scheduling of Confirmatory Tests at EPA's Laboratory

A. Timing Considerations for Certification

Manufacturers are cautioned not to delay making available to EPA those vehicles selected for confirmatory testing. The manufacturer is responsible for allowing EPA sufficient time to conduct confirmatory testing prior to the manufacturer's need for the official data.

B. Scheduling and Required Information

1. If EPA determines that a vehicle must be confirmatory tested at EPA for either emission or fuel economy purposes, manufacturers should schedule testing through their respective EPA certification teams. To schedule confirmatory testing, the manufacturer will need to provide EPA with the following information in sufficient time to have the information reviewed for adequacy and processed into EPA's data system prior to scheduled confirmatory testing (usually three working days):

a. Identification numbers of the vehicles to be tested; and

b. Special vehicle supplies or equipment (e.g., properly marked up shift traces, unique tail pipe adaptors, heat blankets, etc.) approved by EPA, and other pertinent vehicle information as requested by the certification team.

2. Test slots will not be scheduled unless all required information has been supplied to EPA.

3. Test slots are scheduled for specific vehicles only. If a manufacturer is unable to present the specific vehicle appropriately configured, for the scheduled test slot, the manufacturer must contact EPA to reschedule the vehicle for another test slot. The manufacturer may not substitute another test vehicle in the lost test slot without advance EPA approval.

C. Scheduling Retests

1. In the event that an emission test conducted at the EPA laboratory is voided, EPA will either:

a. Schedule a retest of the vehicle after the vehicle is ready for testing or

b. Waive the confirmatory test and accept the manufacturer's test data, if the void test provides sufficient information to indicate to EPA that the manufacturer's test data are acceptable.

2. Under the provisions of §86.081-29(a)(3)(iii) (B), when an emission-data vehicle is confirmatory tested by EPA and fails-Federal standards, the manufacturer may request a retest. (See Section VIII, and Section VI.D.2.c for special considerations of vehicles failing California standards.) If such a request is made, EPA will schedule a retest of the vehicle after the vehicle is ready for testing. Requests for retests of valid tests should be directed to the appropriate EPA certification team.

VIII. Official Use of Confirmatory Data

The first valid confirmatory test performed in accordance with EPA's requirement for confirmatory testing will be considered the official data for emission certification compliance determination unless the vehicle fails applicable exhaust or evaporative emission standards. In that case, at the manufacturer's request, EPA will normally allow retesting of the failed data vehicle to produce a second valid test. This second test will constitute the official data for emission certification compliance determination. Any subsequent retests for fuel economy confirmation, whether conducted at MVEL or at the manufacturer's facility, will not be considered official data for emission compliance determination. However, as provided in §600.007(e), EPA may investigate any evidence of emission failure to determine if non-compliance with Section 202 of the Clean Air Act would be expected. Such an investigation could delay or jeopardize a manufacturer's emission certificate covering the failed vehicle.

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